IN THE CLAIMS

Please substitute the following listing of claims for the previous listing of claims.

1. (Currently amended) A substrate support ring comprising:

(a) a band comprising an inner perimeter to at least partially surround a periphery of the substrate, the band comprising a radiation absorption surface; and

(b) a lip extending radially inwardly from the inner perimeter of the band to support the substrate,

wherein the band and lip comprise a sintered composition of silicon carbide and nitrogen, and

wherein the radiation absorption surface comprises a layer of oxidized silicon carbide.

2. (Canceled)

3. (Currently amended) A ring according to claim ~~2~~ 1 wherein the sintered composition comprises a nitrogen content that is sufficiently high such that the sintered composition is substantially opaque to incident radiation.

4. (Original) A ring according to claim 1 wherein the band and lip comprise a combined thermal mass T_m, and wherein the radiation absorption surface comprises an absorptivity A and a surface area S_a, such that the ratio $(A \times S_a)/T_m$ is from about 4×10^{-5} m^2K/J to about 9×10^{-4} m^2K/J.

5. (Original) A ring according to claim 4 wherein the radiation absorption surface comprises an absorptivity A and a surface area S_a, such that the ratio $(A \times S_a)/T_m$ is from about 5.2×10^{-4} K/J to about 7.6×10^{-1} K/J.

6. (Original) A ring according to claim 1 wherein the radiation absorption surface comprises an absorptivity of from about 0.1 to about 1.0, and a surface area of from about $2X10^{-3}$ m^2 to about $3X10^{-2}$ m^2.

7. (Original) A ring according to claim 1 wherein the band and lip comprise a heat capacity of from about 900 J/Kg/K to about 1300 J/Kg/K, and wherein the thermal mass is from about 2 J/K to about 750 J/K.

8. (Original) A process chamber comprising:

(i) a process gas supply and exhaust;

(ii) a substrate support ring according to claim 1; and

(iii) a radiation source to direct radiation onto the substrate and radiation absorption surface of the ring; and

(iv) an exhaust.

9. (Original) A substrate support ring comprising:

(a) a band comprising an inner perimeter to at least partially surround a periphery of the substrate, the band comprising a radiation absorption surface; and

(b) a lip extending radially inwardly from the inner perimeter of the band,

wherein the band and lip comprise a combined thermal mass T_m, and

wherein the radiation absorption surface comprises an absorptivity A and a surface area S_a, such that the ratio $(A \times S_a)/T_m$ is from about $4x10^{-5}$ m^2K/J to about $9x10^{-4}$ m^2K/J.

10. (Original) A ring according to claim 9 wherein the radiation absorption surface comprises an absorptivity A and a surface area S_a, such that the ratio $(A \times S_a)/T_m$ is from about $5.2x10^{-4}$ K/J to about $7.6x10^{-4}$ K/J.

11. (Original) A ring according to claim 9 wherein the radiation absorption surface comprises an absorptivity of from about 0.1 to about 1.0, and a surface area of from about $2X10^{-3}$ m^2 to about $3X10^{-2}$ m^2.

12. (Original) A ring according to claim 9 wherein the band and lip comprise silicon carbide, and wherein the radiation absorption surface of the band comprises an oxidized layer of the silicon carbide.

13. (Original) A ring according to claim 12 wherein the band and lip comprise a sintered composition of silicon carbide and nitrogen.

14. (Original) A method of fabricating a substrate support ring to support a substrate in a process chamber, the substrate comprising a thermal mass T_{ms}, and a top surface having an absorptivity A_s, and a surface area S_{as}, wherein the substrate comprises a substrate heating rate value comprising $(A_s \times S_{as})/T_{ms}$, the fabrication method comprising:

(a) forming a band comprising an inner perimeter to at least partially surround a periphery of the substrate, and forming a lip extending radially inwardly from the inner perimeter of the band, the band and lip comprising a combined thermal mass T_{mr} and having a support ring heating rate value comprising $(A_r \times S_{ar})/T_{mr}$; and

(b) forming a radiation absorption surface on the band, the radiation absorption surface comprising an absorptivity A_r and surface area S_{ar}, such that the ratio of the support ring heating value to the substrate heating rate value is within a predetermined range.

15. (Original) A method according to claim 14 wherein the predetermined range is from about 1.05 to about 1.3.

16. (Original) A method according to claim 14 wherein the heating rate value of the support ring is within from about 5% to about 30% of the substrate heating rate value.

17. (Original) A method according to claim 14 wherein the support ring heating rate value is from about 4×10^{-5} m^2K/J to about 9×10^{-4} m^2K/J.

18. (Original) A method according to claim 17 wherein the support ring heating rate value is from about 5.2×10^{-4} K/J to about 7.6×10^{-4} K/J.

19. (Original) A method according to claim 14 wherein (a) comprises forming the band and lip from silicon carbide, and wherein (b) comprises forming a radiation absorption surface of the band that comprises an oxidized layer of the silicon carbide.

20. (New) A process chamber comprising:

(i) a process gas supply and exhaust;

(ii) a substrate support ring according to claim 9; and

(iii) a radiation source to direct radiation onto the substrate and radiation absorption surface of the ring; and

(iv) an exhaust.

21. (New) A substrate support ring comprising:

(a) a band comprising an inner perimeter to at least partially surround a periphery of the substrate, the band comprising a radiation absorption surface, wherein the radiation absorption surface comprises (i) an absorptivity of from about 0.1 to about 1.0, and (ii) a surface area of from about $2X10^{-3}$ m^2 to about $3X10^{-2}$ m^2; and

(b) a lip extending radially inwardly from the inner perimeter of the band to support the substrate,

wherein the band and lip comprise silicon carbide, and

wherein the radiation absorption surface comprises a layer of oxidized silicon carbide.

22. (New) A ring according to claim 21 wherein the band and lip comprise a sintered composition of silicon carbide and nitrogen having a nitrogen content that is sufficiently high such that the sintered composition is substantially opaque to incident radiation.

23. (New) A ring according to claim 21 wherein the band and lip comprise a combined thermal mass T_m, and wherein the radiation absorption surface comprises an absorptivity A and a surface area S_a, such that the ratio $(A \times S_a)/T_m$ is from about $4x10^{-5}$ m^2K/J to about $9x10^{-4}$ m^2K/J.

24. (New) A substrate support ring comprising:

(a) a band comprising an inner perimeter to at least partially surround a periphery of the substrate, the band comprising a radiation absorption surface; and

(b) a lip extending radially inwardly from the inner perimeter of the band to support the substrate,

wherein the band and lip comprise silicon carbide, and wherein the radiation absorption surface comprises a layer of oxidized silicon carbide, and

wherein the band and lip furthermore comprise (i) a heat capacity of from about 900 J/Kg/K to about 1300 J/Kg/K, and (iii) a combined thermal mass of from about 2 J/K to about 750 J/K.

25. (New) A ring according to claim 24 wherein the band and lip comprise a sintered composition of silicon carbide and nitrogen having a nitrogen content that is sufficiently high such that the sintered composition is substantially opaque to incident radiation.

26. (New) A ring according to claim 24 wherein the band and lip comprise a combined thermal mass T_m, and wherein the radiation absorption surface comprises an absorptivity A and a surface area S_a, such that the ratio $(A \times S_a)/T_m$ is from about 4×10^{-5} m^2K/J to about 9×10^{-4} m^2K/J.